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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,434	02/03/2005	Jan Birnstock	5367-104PUS	9330

27799 7590 03/29/2006

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EXAMINER

RIELLEY, ELIZABETH A

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Interview Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/500,434	BIRNSTOCK ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Elizabeth A. Rielley	2879	

All participants (applicant, applicant's representative, PTO personnel):

(1) Elizabeth A. Rielley. (3) \_\_\_\_\_.

(2) Thomas Langer. (4) \_\_\_\_\_.

Date of Interview: 17 March 2006.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.  
If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: \_\_\_\_\_.

Identification of prior art discussed: \_\_\_\_\_.

Agreement with respect to the claim's f) ☐ was reached. g) ☐ was not reached. h) ☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Mr. Langer informed the office that page 7 was missing in his copy of the Office Action dated 2/28/2006 as well as in Palm. Please find enclosed the complete copy of the Office Action in question.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

*msy 3/24/06*  
**MARICELI SANTIAGO**  
**PRIMARY EXAMINER**

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

## DETAILED ACTION

### *Response to Amendment*

Amendment filed 12/5/05 has been entered and considered by the Examiner. Claims 17-24 have been added. Currently, claims 1-24 are pending in the instant application.

### *Claim Objections*

Claim 17 objected to because of the following informalities: there is a typo where OLFD should read OLED. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 6, 8, 9, 11, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakayama et al. (US 6133691).

In regard to claim 1, Nakayama et al. ('691) teach an organic light emitting diode (OLED) with at least one active, light emitting organic layer (403a, 403b; figure 18a; column 6 line 22-41) which has refractive index inhomogeneities (column 7 line 17 to column 8 line 14; column 8 line 54 to column 10

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line 3), wherein the organic layer has at least one first partial region and at least one second partial region which comprise organic material and have different refractive indices, and the partial regions form a layer with a composite-like structure (see figure 18).

In regard to claim 2, the Examiner notes that the Applicant's recitation of different partial regions formed by separation of the applied layer material is considered a product by process limitation. The patentability of the claim resides on the final product and not the process by which is manufactured. Accordingly, Nakayama et al ('691) teachings of partial regions in the OLED light emitting layer is considered to meet the claimed recitation.

In regard to claims 3 and 11, Nakayama et al ('691) teach the organic layer has charge carrier transport material and/or emitter material (column 6 lines 22-41).

In regard to claim 5, Nakayama et al ('691) teach the organic layer has at least two polymers with different refractive indices (column 8 line 54 to column 10 line 36).

In regard to claim 6, Nakayama et al ('691) teach the first and second partial regions are produced in a layer made from a single type of a plastics material by means of local variation of a chemical and/or physical property (column 8 line 54 to column 10 line 36). The Examiner notes that the Applicant's recitation of a plastic material made of local variation of a chemical and/or physical property is considered a product by process limitation. The patentability of the claim resides on the final product and not the process by which is manufactured. Accordingly, Nakayama et al ('691) teaching of a first and second partial region made in a single layer of plastic material is considered to meet the claimed recitation.

In regard to claim 8, the Examiner notes that Applicant's recitation of the locally varying property is at least one of the properties degree of crosslinking, degree of branching density and copolymerization, is considered a product by process limitation. The patentability of the claim resides on the final product and not the process by which is manufactured. Accordingly, Nakayama et al's ('691) teaching of a first and second partial region made in a single layer of plastic material is considered to meet the claimed recitation.

In regard to claim 9, Nakayama et al ('691) teach a method for producing an organic light emitting diode (OLED) with at least one active, light emitting organic layer which has refractive index inhomogeneities (403a, 403b; figure 18a; column 6 line 22-41) characterized in that wherein the material of the organic layer is applied to a carrier in such a way that, during or after a coating step (column 4 lines 13-29), at least one first partial region and at least one second partial region form in the layer, said partial regions having different refractive indices (column 7 line 17 to column 8 line 14; column 8 line 54 to column 10 line 3), and the partial regions form a layer with a composite-like structure (see figure 18a).

In regard to claim 17, Nakayama et al ('691) teach an organic light-emitting diode (OLED) with at least one active, light emitting layer (403a, 403b; figure 18a; column 6 line 22-41), the light emitting layer comprising a first matrix material and at least two partial regions of a second material which are embedded in the matrix material (see figure 16); wherein the second material has a refractive index different from the matrix material (column 7 line 17 to column 8 line 14; column 8 line 54 to column 10 line 3).

In regard to claim 18, Nakayama et al ('691) teach the matrix material is an active, light-emitting material and the regions of the second material form scattering centers in the matrix material (column 7 line 17 to column 8 line 14; column 8 line 54 to column 10 line 3).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al (US 6133691) in view of Von Hoene et al (US 4123269).

In regard to claims 4 and 12, Nakayama et al teach all the limitations set forth, as described above, except the organic layer has electrically inactive material. Von Hoene et al ('269) teach an organic layer has electrically inactive material (column 3 line 1-62) in order to protect the electrically active parts of the EL layer (column 2 lines 12-14). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the OLED of Imanishi with the inactive material of Von Hoene. Motivation to combine would be to protect the electrically active parts of the EL layer.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al (US 6133691) in view of Imanishi (US 6828042).

Nakayama et al teach all the limitations set forth, as described above, except crystalline regions within an amorphous layer matrix material. Imanishi et al ('042) teach crystalline regions within an amorphous layer matrix material (column 10 lines 47 – 52) in order to improve light discharge efficiency (abstract). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the OLED of Nakayama with the crystalline regions of Imanishi. Motivation to combine would be to improve light discharge efficiency.

Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al (US 6133691) in view of Okada et al (US 20020064683).

Nakayama et al ('691) teach all the limitations set forth, as described above, except the matrix material is made from PPV and PVK. Okada et al ('683) teach the matrix material is made from PPV and PVK (paragraph 74) in order to increase the conductivity of the device (paragraph 74). In regard to Applicant's limitation that light emitting layer comprises one-third PPV and two-thirds PVK as well as half PPV and half PVK, it would have been obvious at the time of the invention to one of ordinary skill in the art to make the light emitting layer in the above fractions, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al (US 6133691) in view of Tessler et al (WO 00/04593).



In regard to claim 23, Nakayama et al ('691) disclose all the limitations set forth, as described above, except the second material regions are sphere shaped. Tessler et al ('593) teach a second material embedded in an OLED light-emitting layer to change the refractive index of the material (page 4, the second material regions may be in the form of spheres (page 6) in order to enhance the emission from the device (page 4). Motivation to combine would be to increase the emission process.

In regard to claim 24, Nakayama et al ('691) teaches at least one region of the second material is completely surrounded by the matrix material (see figure 16).

***Allowable Subject Matter***

Claims 10 and 13-16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 10, the reference of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 10, and specifically comprising the limitation wherein the partial regions are formed by a separation process in the forming of polymer layer from a mixture of soluble or dispersible polymers or monomers, in which at least two phases are produced. Claims 13-16 are also indicated as allowable subject matter, due to their dependency from claim 10.

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***Response to Arguments***

Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Elizabeth Rielley

Examiner  
Art Unit 2879

msj 3/24/06  
MARICELI SANTIAGO  
PRIMARY EXAMINER